

IN THE CLAIMS:

Please amend the Claims as follows:

1. **(Currently Amended)** A film-forming apparatus comprising:

a gas-mixing chamber for admixing a raw gas and a reactive gas;

a film-forming chamber connected to the gas-mixing chamber;

a circular shower head disposed on at a top face of the film-forming chamber;

a stage for placing thereon a substrate to be processed, the stage being disposed inside the film-forming chamber and moveable in an up and down manner;

an exhaust port for discharging an exhaust gas from inside the film-forming chamber to outside of the film-forming chamber, the exhaust port being formed through a wall surface of ~~defined only by a lowermost surface of a side wall of the film-forming chamber and a lowermost surface of the film-forming chamber and located in a position below a level of the stage at a time of film formation, the exhaust port being so constructed and arranged that the exhaust gas generated in a space defined by the shower head and the top~~ an upper face of the stage is discharged from out of the exhaust port through a clearance between the a side wall of the film-forming chamber and the stage; and

a gas mixture prepared in the gas-mixing chamber being introduced into the film-forming chamber via through the shower head, thereby forming a film on the substrate to be processed,

wherein a gas mixture supply port in fluid communication between which supplies ~~the gas mixture from the gas-mixing chamber to~~ and the shower head is located on a

~~radially extending line of the shower head, and defined only by an outer peripheral surface of the gas-mixing chamber and an inner surface of the film-forming apparatus,~~

~~wherein the gas mixture supply port is disposed above the shower head and is constructed and arranged such that the gas mixture to be supplied from the gas-mixing chamber flows in direct contact with, and from circumferentially outside of, between the gas-mixing chamber and the inner surface of the film-forming apparatus and through the upper surface of the shower head toward a central portion along the upper surface of the shower head.~~

Claim 2 **(Canceled).**

3. **(Currently Amended)** The film-forming apparatus as set forth in claim 1, wherein when the flow rate of the gas mixture is large, the shower conductance is small and the gas mixture is injected into the film-forming chamber from ~~the~~ a central portion of the shower head (hereunder referred to as "central gas injection") upon the formation of a the film, ~~the apparatus is so designed that it comprises a wherein the~~ shower head ~~having~~ has a relatively large diameter, that the distance between the shower head and the substrate to be processed is increased or that a the shower head having a the relatively large diameter is used and the distance between the shower head and the substrate to be processed is increased, to thus prevent the central gas injection of the gas mixture and to make the manner of a gas injection of the gas mixture uniform.

4. **(Currently Amended)** The film-forming apparatus as set forth in claim 1, wherein when the flow rate of the gas mixture is small, the shower conductance is

large and the gas mixture is injected into the film-forming chamber from a the shower head and into a region above a the substrate to be processed from the periphery of the shower head (hereunder referred to as "peripheral gas injection") upon the formation of a the film, ~~the apparatus is so designed that it comprises a wherein the~~ shower head has having a relatively small diameter, that the distance between the shower head and the substrate to be processed is reduced or that a the shower head having a the relatively small diameter is used and the distance between the shower head and the substrate to be processed is reduced, to thus prevent the peripheral gas injection of the gas mixture and to make the manner of the gas injection of the gas mixture uniform.

5. **(Currently Amended)** The film-forming apparatus as set forth in claim 1, wherein the an inner diameter of the film-forming chamber and ~~the~~ a diameter of the shower head satisfy the following relation:

(diameter of the shower head) $\times 1.5 < (\text{inner diameter of the film-forming chamber}) < (\text{diameter of the shower head}) \times 2.5$.

6. **(Currently Amended)** The film-forming apparatus as set forth in claim 5, wherein the a pressure in the film-forming chamber, the diameter of the shower head and ~~the~~ an overall flow rate of gases upon the formation of the film satisfy the following relations, respectively:

a) $2 \text{ Torr} < (\text{pressure in the film-forming chamber}) < 10 \text{ Torr}$

b) diameter of the substrate to be processed $< (\text{diameter of the shower head}) \times 1.5$ and

c) $2500 \text{ sccm} < (\text{overall flow rate of gases}) < 7000 \text{ sccm}$.

Claim 7. (Canceled).

8. (Currently Amended) The film-forming apparatus as set forth in claim 1, wherein the a pressure in the film-forming chamber, the a diameter of the shower head and the an overall flow rate of gases upon the formation of the film satisfy the following relations, respectively:

a) $2 \text{ Torr} < (\text{pressure in the film-forming chamber}) < 10 \text{ Torr}$

b) $\text{diameter of the substrate to be processed} < (\text{diameter of the shower head}) \times 1.5$ and

c) $2500 \text{ sccm} < (\text{overall flow rate of gases}) < 7000 \text{ sccm}$.

9. (Currently amended) The film-forming apparatus as set forth in claim 1, wherein the a clearance for exhaustion satisfies the relation represented by the following equation:

$$0.02 \text{ m}^3/\text{s} < \text{Exhaustion Conductance} < 0.08 \text{ m}^3/\text{s}.$$

10. (Currently Amended) The film-forming apparatus as set forth in claim 9, wherein the a pressure in the film-forming chamber, the a diameter of the shower head and the an overall flow rate of gases upon the formation of the film satisfy the following relations, respectively:

a) $2 \text{ Torr} < (\text{pressure in the film-forming chamber}) < 10 \text{ Torr}$

b) $\text{diameter of the substrate to be processed} < (\text{diameter of the shower head}) \times 1.5$ and

c) $2500 \text{ sccm} < (\text{overall flow rate of gases}) < 7000 \text{ sccm}$.

11. **(Currently Amended)** The film-forming apparatus as set forth in claim 1, wherein a gas ring is disposed at ~~the~~ a periphery of the top face of the film-forming chamber so that an inert gas, which is not directly involved in the film formation, can uniformly be introduced into the film-forming chamber through the gas ring and along ~~the~~ an inner surface of the side wall of the film-forming chamber.

Claim 12. **(Canceled)**.

13. **(Currently Amended)** A film-forming apparatus, which comprises:
a load-lock chamber for stocking wafers conveyed from a wafer cassette in the atmospheric conditions;
a film-forming chamber;
a conveyer chamber positioned between the load-lock chamber and the film-forming chamber;
a gas-mixing chamber for admixing a raw gas and a reactive gas positioned on the upstream side of the film-forming chamber;
a shower head arranged ~~on the~~ at a top face of the film-forming chamber; and
a stage arranged in the film-forming chamber for placing a substrate to be processed and movable in an up and down manner, in which a gas mixture prepared in the gas-mixing chamber is introduced into the film-forming chamber through the shower head to thus form a film on the substrate via a gas mixture supply port ~~defined only by an outer peripheral surface of~~ in fluid communication between the gas-mixing chamber and the shower head is located on a radially extending line of the shower head ~~an inner surface of the film-forming apparatus,~~

wherein an exhaust port for discharging the exhaust gas from the film-forming chamber to outside of the film-forming chamber is formed through a wall surface of is defined ~~only by a lowermost surface of a side wall of the film-forming chamber and a lowermost surface of the film-forming chamber and is located~~ in a position below a level of the stage at a time of film formation, the exhaust gas generated in a space defined by the shower head and an upper face of the stage is discharged out of the exhaust port through a clearance between a side wall of the film-forming chamber and the stage an up position and having an opening extending in a direction that is parallel relative to the direction ~~in which the stage is raised and lowered, and~~

wherein the gas mixture supply port is constructed and arranged such that the gas mixture to be supplied from the gas-mixing chamber flows in direct contact with, and from circumferentially outside of, the upper surface of the shower head toward a central portion along the upper surface of the shower head

~~wherein the apparatus being characterized in that it is so designed that it can satisfy the requirements as set forth in claim 1.~~